CLAIMS

1. A wearable device comprising:

a single display panel comprising integrally formed a first display portion and a second display portion;

the first display portion comprises a liquid-crystal display technology;

the second display portion comprises a light-emitting diode technology or an organic light-emitting diode technology;

a first driver circuit configured to control the first display portion with a first frequency, wherein the first driver circuit is configured to operate the first display portion to display a watch function by segment display method; and

a second driver circuit configured to control the second display portion with a second frequency,

wherein the second driver circuit is configured to operate the second display portion to display a smart watch function by matrix dots.

2. The wearable device of claim 1,

wherein the first driver circuit is configured to provide a first power to the first display portion;

wherein the second driver circuit is configured to provide a second power to the second display portion, wherein the first power is lower than the second power.

3. The wearable device of claim 2,

wherein the first power is in a range of 1 uA to 10 uA.

4. The wearable device of any one of claims 2 to 3,

wherein the second power is in a range of 100 uA to 300 uA.

5. The wearable device of any one of claims 1 to 4,

wherein the first frequency is up to 64 Hz.

6. The wearable device of any one of claims 1 to 5,

wherein the second frequency is in a range of up to 120 Hz.

7. The wearable device of any one of claims 1 to 6,

wherein any one of the first driver circuit and the second driver circuit comprises a chip-on-flex or chip-on-glass.

8. The wearable device of any one of claims 1 to 7,

wherein the first display portion and the second display portion are configured to be backlit by a common backlight or dedicated portion.

9. A method for manufacturing a wearable device, the method comprising:

integrally forming a single display panel comprising a first display portion and a second display portion;

the first display portion comprises a liquid-crystal display technology;

the second display portion comprises a light-emitting diode technology or an organic light-emitting diode technology;

forming a first driver circuit for controlling the first display portion with a first frequency wherein the first driver circuit is configured to operate the first display portion to display a watch function by segment display method; and

forming a second driver circuit for controlling the second display portion with a second frequency,

wherein the second driver circuit is configured to operate the second display portion to display a smart watch function by matrix dots.

10. The method of claim 9,

wherein the first driver circuit is formed to provide a first power to the first display portion; and

wherein the second driver circuit is configured to provide a second power to the second display portion, wherein the first power is lower than the second power.

11. The method of claim 10,

wherein the first power is in a range of 1 uA to 10 uA.

12. The method of any one of claims 10 to 11,

wherein the second power is in a range of 100 uA to 300 uA.

13. The method of any one of claims 9 to 12,
wherein the first frequency is up to 64 Hz.

14. The method of any one of claims 9 to 13,
wherein the second frequency is up to 120 Hz.

15. The method of any one of claims 9 to 14,
wherein any one of the first driver circuit and the second driver circuit is formed according to a chip-on-flex technology or a chip-on-glass technology.

16. The method of any one of claims 9 to 15,
wherein the first display portion and the second display portion are formed to be backlit by a common backlight or dedicated portion.